Comments on Spectrum Policy Task Force Report

The Ministry of Public Management, Home Affairs, Posts and Telecommunications in Japan appreciates the initiatives taken by the FCC regarding spectrum policy review, and is interested in how the recommendations outlined in the task force report will contribute to promoting spectrum efficiency and wireless businesses. However, the Ministry has the following concerns with respect to specific points in the Task Force Report.

1. Spectrum use under Exclusive Use Model

(1) Spectrum auction

The Exclusive Use Model is predicated for frequency assignment by means of the spectrum auction. Application of the model to spectrum use should be carefully considered taking into account the following disadvantages associated with the spectrum auction as identified from past experiences.

a) Concern over monopoly of spectrum by an entity with access to unlimited funds.
b) Financial burden on common carriers through bidding escalation.
c) Rise in user fees for spectrum-based telecommunication services, and concern over degradation of service quality.

With respect to socio-economical globalization and international standardization of cellular phones and wireless access systems, the merits are international and domestic roaming for users and economy of scale for manufacturers. Assigning frequencies by means of spectrum auction makes it difficult to achieve a nationwide provision of service using a common standard, and hence needs further careful consideration.

(2) Transferable spectrum use rights

The Task Force recommends that the licensee have exclusive and transferable spectrum use rights and be able to sell or lease spectrum capacity during lower-use periods to other users. This could result in allowing users log-term ownership of assigned spectrum. The introduction of the Exclusive Use Model should be carefully considered taking into account this disadvantage.

In particular, it has to be noted that spectrum efficiency may not be achieved when spectrum trade based on transferable spectrum rights is introduced and does not work sufficiently. Market failure may occur and could be serious due to the following factors:

a) Limited supply of tradable spectrum;
b) Restrictions on spectrum use such as an internationally agreed allocation; and
c) Risk of monopoly of spectrum use rights by those who expect profit from rise in spectrum values.

This concern is exemplified by the situation regarding the land market. Market failure in the Japanese land market has resulted in inefficient and ineffective allocation of land as can be seen in overcrowded land use, unused land in metropolitan areas, and land prices that are out of reach of the average worker.

Furthermore, it has to be noted that huge additional costs for spectrum use resulting from frequency assignments based on the auction, trade and lease of spectrum would raise user fees to an outrageous level.

2. Spectrum use under Commons Model

(1) Unlicensed radio stations

The Commons Model allows unlimited numbers of unlicensed users to share frequencies. Extensive and unlimited introduction of unlicensed radio stations will make it difficult to refarm spectrum in order to make available spectrum for new wireless systems based on newly developed wireless technologies. It would be appropriate to increase unlicensed bands taking into account trends in spectrum use.

(2) Underlay

a) Underlay below interference temperature threshold

The task force recommends that access rights be defined for underlay devices with low power such as UWB using frequencies assigned to licensed stations below interference temperature threshold based on easements. Since such unlicensed stations may cause harmful interference to licensed stations, it is necessary to undertake careful studies on the introduction of underlay devices.

b) Spectrum use during lower-use periods

The task force recommends that the FCC consider methods for additional spectrum access for unlicensed devices using cognitive radio technologies to find white space in existing bands assigned for primary users. Since such an unlicensed device could cause harmful interference to primary users when the unlicensed device fails to identify emission from the primary users blocked by obstacles such as buildings and mistakenly uses the occupied frequency, it is necessary to undertake careful technical studies and selection of systems sharing frequencies with the unlicensed devices.

3. Spectrum use under Command and Control Model

- Spectrum subject to Command and Control Model

The Ministry supports the task force’s observation that a model does not fit all.

The task force suggests that the command-and-control approach to radio licensing be basically abolished for areas except for those including public safety where it is necessary to take this approach. Taking into consideration the disadvantages of spectrum auction or trade, the command-and-control approach is suitable not only for areas such as aeronautical, maritime, radiodetermination and disaster relief communications, and satellite communications, which are required to conform to international obligations, but also for many kinds of mid- or long-range communications. It would be appropriate to take careful consideration when making decisions on specific cases.